

SEQUENCE LISTING

<110> Synaptic Pharmaceutical Corporation

<120> DNA Encoding A Human Melanin Concentrating Hormone
Receptor (MCH1) And Uses Thereof

<130> 57453-A-PCT/JPW

<140> PCT/US99/31169

<141> 1999-12-30

<150> 09/224,426

<151> 1998-12-31

<160> 29

<170> PatentIn Ver. 2.1

<210> 1

<211> 1269

<212> DNA

<213> Homo sapiens

<400> 1

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 <213> Homo sapiens

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 Cys Gly Ala Cys Ala Pro Gly Gln Gly Gly Arg Arg Trp Arg Leu Pro
 35 40 45
 Gln Pro Ala Trp Val Glu Gly Ser Ser Ala Arg Leu Trp Glu Gln Ala
 50 55 60
 Thr Gly Thr Gly Trp Met Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly
 65 70 75 80
 Pro Asn Ala Ser Asn Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala
 85 90 95
 Gly Ser Pro Pro Arg Thr Gly Ser Ile Ser Tyr Ile Asn Ile Ile Met
 100 105 110
 Pro Ser Val Phe Gly Thr Ile Cys Leu Leu Gly Ile Ile Gly Asn Ser
 115 120 125
 Thr Val Ile Phe Ala Val Val Lys Lys Ser Lys Leu His Trp Cys Asn
 130 135 140
 Asn Val Pro Asp Ile Phe Ile Ile Asn Leu Ser Val Val Asp Leu Leu
 145 150 155 160
 Phe Leu Leu Gly Met Pro Phe Met Ile His Gln Leu Met Gly Asn Gly
 165 170 175
 Val Trp His Phe Gly Glu Thr Met Cys Thr Leu Ile Thr Ala Met Asp
 180 185 190
 Ala Asn Ser Gln Phe Thr Ser Thr Tyr Ile Leu Thr Ala Met Ala Ile
 195 200 205
 Asp Arg Tyr Leu Ala Thr Val His Pro Ile Ser Ser Thr Lys Phe Arg
 210 215 220

Lys Pro Ser Val Ala Thr Leu Val Ile Cys Leu Leu Trp Ala Leu Ser
225 230 235 240

Phe Ile Ser Ile Thr Pro Val Trp Leu Tyr Ala Arg Leu Ile Pro Phe
245 250 255

Pro Gly Gly Ala Val Gly Cys Gly Ile Arg Leu Pro Asn Pro Asp Thr
260 265 270

Asp Leu Tyr Trp Phe Thr Leu Tyr Gln Phe Phe Leu Ala Phe Ala Leu
275 280 285

Pro Phe Val Val Ile Thr Ala Ala Tyr Val Arg Ile Leu Gln Arg Met
290 295 300

Thr Ser Ser Val Ala Pro Ala Ser Gln Arg Ser Ile Arg Leu Arg Thr
305 310 315 320

Lys Arg Val Thr Arg Thr Ala Ile Ala Ile Cys Leu Val Phe Phe Val
325 330 335

Cys Trp Ala Pro Tyr Tyr Val Leu Gln Leu Thr Gln Leu Ser Ile Ser
340 345 350

Arg Pro Thr Leu Thr Phe Val Tyr Leu Tyr Asn Ala Ala Ile Ser Leu
355 360 365

Gly Tyr Ala Asn Ser Cys Leu Asn Pro Phe Val Tyr Ile Val Leu Cys
370 375 380

Glu Thr Phe Arg Lys Arg Leu Val Leu Ser Val Lys Pro Ala Ala Gln
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Thr Glu Ser Lys Gly Thr
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<210> 3

<211> 1214

<212> DNA

<213> Rattus norvegicus

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<210> 4

<211> 353

<212> PRT

<213> Rattus norvegicus

<400> 4

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 20 25 30

Thr Gly Ser Val Ser Tyr Ile Asn Ile Ile Met Pro Ser Val Phe Gly
 35 40 45

Thr Ile Cys Leu Leu Gly Ile Val Gly Asn Ser Thr Val Ile Phe Ala
 50 55 60

Val Val Lys Lys Ser Lys Leu His Trp Cys Ser Asn Val Pro Asp Ile
 65 70 75 80

Phe Ile Ile Asn Leu Ser Val Val Asp Leu Leu Phe Leu Leu Gly Met
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Pro Phe Met Ile His Gln Leu Met Gly Asn Gly Val Trp His Phe Gly
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<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer/probe

<400> 5
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<210> 6
<211> 26
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26

<210> 7
<211> 45
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<213> Artificial Sequence

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<400> 7
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<210> 8
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<212> DNA
<213> Artificial Sequence

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<400> 8
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25

<210> 9
<211> 27
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<213> Artificial Sequence

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<210> 10
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<212> DNA
<213> Artificial Sequence

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<400> 10
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37

<210> 11
<211> 38
<212> DNA
<213> Artificial Sequence

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<400> 11
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<210> 12
<211> 34
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 12
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<210> 13
<211> 29
<212> DNA
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<400> 13
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29

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer/probe

<400> 14
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20

<210> 15
<211> 18
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 15
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18

<210> 16
<211> 100
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<220>
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MCH1

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Cys Gly Ala Cys Ala Pro Gly Gln Gly Gly Arg Arg Trp Arg Leu Pro
35 40 45
Gln Pro Ala Trp Val Glu Gly Ser Ser Ala Arg Leu Trp Glu Gln Ala
50 55 60
Thr Gly Thr Gly Trp Ala Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly
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Pro Asn Ala Ser Asn Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala
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Gly Ser Pro Pro
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<210> 17
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: mutated human
MCH1

<400> 17
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Gly Gly Gly Ser Gly Cys Gln Ala Thr Glu Glu Asp Pro Leu Pro Asp
20 25 30
Cys Gly Ala Cys Ala Pro Gly Gln Gly Gly Arg Arg Trp Arg Leu Pro
35 40 45
Gln Pro Ala Trp Val Glu Gly Ser Ser Ala Arg Leu Trp Glu Gln Ala
50 55 60
Thr Gly Thr Gly Trp Ala Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly
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Pro Asn Ala Ser Asn Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala

Gly Ser Pro Pro
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<210> 18
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<400> 18
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<210> 19
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<210> 20
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<210> 21
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<400> 21

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<210> 22

<211> 33

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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33

<210> 23

<211> 33

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 23

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<210> 24

<400> 24

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<210> 25

<211> 37

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 25

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37

<210> 26

<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<210> 27
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<212> PRT
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20 25 30
Cys Gly Ala Cys Ala Pro Gly Gln Gly Gly Arg Arg Trp Arg Leu Pro
35 40 45
Gln Pro Ala Trp Val Glu Gly Ser Ser Ala Arg Leu Trp Glu Gln Ala
50 55 60
Thr Gly Thr Gly Trp Ala Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly
65 70 75 80
Pro Asn Ala Ser Asn Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala
85 90 95
Gly Ser Pro Pro Arg Thr Gly Ser Ile Ser Tyr Ile Asn Ile Ile Met
100 105 110
Pro Ser Val Phe Gly Thr Ile Cys Leu Leu Gly Ile Ile Gly Asn Ser
115 120 125
Thr Val Ile Phe Ala Val Val Lys Lys Ser Lys Leu His Trp Cys Asn
130 135 140

Asn	Val	Pro	Asp	Ile	Phe	Ile	Ile	Asn	Leu	Ser	Val	Val	Asp	Leu	Leu	
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Val	Trp	His	Phe	Gly	Glu	Thr	Met	Cys	Thr	Leu	Ile	Thr	Ala	Met	Asp	
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Ala	Asn	Ser	Gln	Phe	Thr	Ser	Thr	Tyr	Ile	Leu	Thr	Ala	Met	Ala	Ile	
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Asp	Arg	Tyr	Leu	Ala	Thr	Val	His	Pro	Ile	Ser	Ser	Thr	Lys	Phe	Arg	
	210					215					220					
Lys	Pro	Ser	Val	Ala	Thr	Leu	Val	Ile	Cys	Leu	Leu	Trp	Ala	Leu	Ser	
225					230					235					240	
Phe	Ile	Ser	Ile	Thr	Pro	Val	Trp	Leu	Tyr	Ala	Arg	Leu	Ile	Pro	Phe	
				245					250					255		
Pro	Gly	Gly	Ala	Val	Gly	Cys	Gly	Ile	Arg	Leu	Pro	Asn	Pro	Asp	Thr	
			260					265					270			
Asp	Leu	Tyr	Trp	Phe	Thr	Leu	Tyr	Gln	Phe	Phe	Leu	Ala	Phe	Ala	Leu	
		275					280					285				
Pro	Phe	Val	Val	Ile	Thr	Ala	Ala	Tyr	Val	Arg	Ile	Leu	Gln	Arg	Met	
	290					295					300					
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Lys	Arg	Val	Thr	Arg	Thr	Ala	Ile	Ala	Ile	Cys	Leu	Val	Phe	Phe	Val	
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Cys	Trp	Ala	Pro	Tyr	Tyr	Val	Leu	Gln	Leu	Thr	Gln	Leu	Ser	Ile	Ser	
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Arg	Pro	Thr	Leu	Thr	Phe	Val	Tyr	Leu	Tyr	Asn	Ala	Ala	Ile	Ser	Leu	
		355					360					365				
Gly	Tyr	Ala	Asn	Ser	Cys	Leu	Asn	Pro	Phe	Val	Tyr	Ile	Val	Leu	Cys	
	370					375					380					
Glu	Thr	Phe	Arg	Lys	Arg	Leu	Val	Leu	Ser	Val	Lys	Pro	Ala	Ala	Gln	
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Gly Gln Leu Arg Ala Val Ser Asn Ala Gln Thr Ala Asp Glu Glu Arg
 405 410 415

Thr Glu Ser Lys Gly Thr
 420

<210> 28
 <211> 422
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: mutated human
 MCH1

<400> 28
 Met Ser Val Gly Ala Ala Lys Lys Gly Val Gly Arg Ala Val Gly Leu
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Gly Gly Gly Ser Gly Cys Gln Ala Thr Glu Glu Asp Pro Leu Pro Asp
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Cys Gly Ala Cys Ala Pro Gly Gln Gly Gly Arg Arg Trp Arg Leu Pro
 35 40 45

Gln Pro Ala Trp Val Glu Gly Ser Ser Ala Arg Leu Trp Glu Gln Ala
 50 55 60

Thr Gly Thr Gly Trp Ala Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly
 65 70 75 80

Pro Asn Ala Ser Asn Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala
 85 90 95

Gly Ser Pro Pro Arg Thr Gly Ser Ile Ser Tyr Ile Asn Ile Ile Met
 100 105 110

Pro Ser Val Phe Gly Thr Ile Cys Leu Leu Gly Ile Ile Gly Asn Ser
 115 120 125

Thr Val Ile Phe Ala Val Val Lys Lys Ser Lys Leu His Trp Cys Asn
 130 135 140

Asn Val Pro Asp Ile Phe Ile Ile Asn Leu Ser Val Val Asp Leu Leu
 145 150 155 160

Phe Leu Leu Gly Met Pro Phe Met Ile His Gln Leu Met Gly Asn Gly

165 170 175

Val	Trp	His	Phe	Gly	Glu	Thr	Met	Cys	Thr	Leu	Ile	Thr	Ala	Met	Asp	
			180					185					190			
Ala	Asn	Ser	Gln	Phe	Thr	Ser	Thr	Tyr	Ile	Leu	Thr	Ala	Met	Ala	Ile	
		195					200					205				
Asp	Arg	Tyr	Leu	Ala	Thr	Val	His	Pro	Ile	Ser	Ser	Thr	Lys	Phe	Arg	
	210					215					220					
Lys	Pro	Ser	Val	Ala	Thr	Leu	Val	Ile	Cys	Leu	Leu	Trp	Ala	Leu	Ser	
225					230					235					240	
Phe	Ile	Ser	Ile	Thr	Pro	Val	Trp	Leu	Tyr	Ala	Arg	Leu	Ile	Pro	Phe	
				245					250					255		
Pro	Gly	Gly	Ala	Val	Gly	Cys	Gly	Ile	Arg	Leu	Pro	Asn	Pro	Asp	Thr	
			260					265					270			
Asp	Leu	Tyr	Trp	Phe	Thr	Leu	Tyr	Gln	Phe	Phe	Leu	Ala	Phe	Ala	Leu	
		275					280					285				
Pro	Phe	Val	Val	Ile	Thr	Ala	Ala	Tyr	Val	Arg	Ile	Leu	Gln	Arg	Met	
	290					295					300					
Thr	Ser	Ser	Val	Ala	Pro	Ala	Ser	Gln	Arg	Ser	Ile	Arg	Leu	Arg	Thr	
305					310					315					320	
Lys	Arg	Val	Thr	Arg	Thr	Ala	Ile	Ala	Ile	Cys	Leu	Val	Phe	Phe	Val	
				325					330					335		
Cys	Trp	Ala	Pro	Tyr	Tyr	Val	Leu	Gln	Leu	Thr	Gln	Leu	Ser	Ile	Ser	
			340					345					350			
Arg	Pro	Thr	Leu	Thr	Phe	Val	Tyr	Leu	Tyr	Asn	Ala	Ala	Ile	Ser	Leu	
		355					360					365				
Gly	Tyr	Ala	Asn	Ser	Cys	Leu	Asn	Pro	Phe	Val	Tyr	Ile	Val	Leu	Cys	
		370				375					380					
Glu	Thr	Phe	Arg	Lys	Arg	Leu	Val	Leu	Ser	Val	Lys	Pro	Ala	Ala	Gln	
385					390					395					400	
Gly	Gln	Leu	Arg	Ala	Val	Ser	Asn	Ala	Gln	Thr	Ala	Asp	Glu	Glu	Arg	
				405					410					415		
Thr	Glu	Ser	Lys	Gly	Thr											

Year	Total		Male		Female	
	No.	%	No.	%	No.	%
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1951	1,000	100.0	500	50.0	500	50.0
1952	1,000	100.0	500	50.0	500	50.0
1953	1,000	100.0	500	50.0	500	50.0
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1998	1,000	100.0	500	50.0	500	50.0
1999	1,000	100.0	500	50.0	500	50.0
2000	1,000	100.0	500	50.0	500	50.0
2001	1,000	100.0	500	50.0	500	

16

Gly Cys Gly Ile Arg Leu Pro Asn Pro Asp Thr Asp Leu Tyr Trp Phe
 195 200 205
 Thr Leu Tyr Gln Phe Phe Leu Ala Phe Ala Leu Pro Phe Val Val Ile
 210 215 220
 Thr Ala Ala Tyr Val Arg Ile Leu Gln Arg Met Thr Ser Ser Val Ala
 225 230 235 240
 Pro Ala Ser Gln Arg Ser Ile Arg Leu Arg Thr Lys Arg Val Thr Arg
 245 250 255
 Thr Ala Ile Ala Ile Cys Leu Val Phe Phe Val Cys Trp Ala Pro Tyr
 260 265 270
 Tyr Val Leu Gln Leu Thr Gln Leu Ser Ile Ser Arg Pro Thr Leu Thr
 275 280 285
 Phe Val Tyr Leu Tyr Asn Ala Ala Ile Ser Leu Gly Tyr Ala Asn Ser
 290 295 300
 Cys Leu Asn Pro Phe Val Tyr Ile Val Leu Cys Glu Thr Phe Arg Lys
 305 310 315 320
 Arg Leu Val Leu Ser Val Lys Pro Ala Ala Gln Gly Gln Leu Arg Ala
 325 330 335
 Val Ser Asn Ala Gln Thr Ala Asp Glu Glu Arg Thr Glu Ser Lys Gly
 340 345 350
 Thr